

## 1-1

## Skills Practice

## Points, Lines, and Planes

Refer to the figure.

1. Name a line that contains point D.

$\overleftrightarrow{DC}$  or line  $p$  or  $\overleftrightarrow{CD}$

2. Name a point contained in line  $n$ .

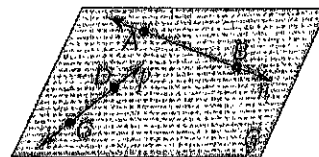
A or B

3. What is another name for line  $p$ ?

$\overleftrightarrow{DC}$  or  $\overleftrightarrow{CD}$

4. Name the plane containing lines  $n$  and  $p$ .

plane  $G$  or plane  $ADC$  or (any 3 noncollinear points)

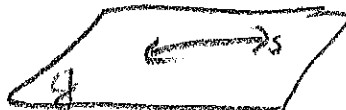


Draw and label a figure for each relationship.

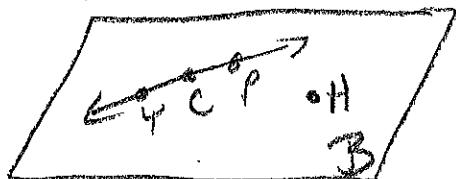
5. Point K lies on  $\overleftrightarrow{RT}$ .



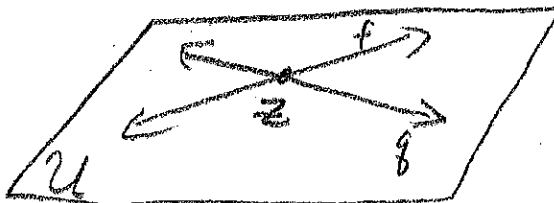
6. Plane  $J$  contains line  $s$ .



7.  $\overleftrightarrow{YP}$  lies in plane  $B$  and contains point C, but does not contain point H.



8. Lines  $q$  and  $f$  intersect at point Z in plane  $U$ .



Refer to the figure.

9. How many planes are shown in the figure?

5

10. How many of the planes contain points F and E?

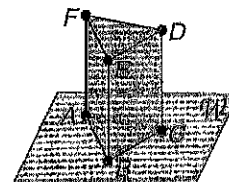
2

11. Name four points that are coplanar.

A, B, E, F or F, D, G, A or B, C, D, E

12. Are points A, B, and C coplanar? Explain.

yes any 3 points are coplanar



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## Practice

## Points, Lines, and Planes

Refer to the figure.

1. Name a line that contains points
- $T$
- and
- $P$
- .

 $\overleftrightarrow{TP}$  or  $\overleftrightarrow{TN}$  or  $\overleftrightarrow{PN}$  or line  $g$ 

2. Name a line that intersects the plane containing points
- $Q$
- ,
- $N$
- , and
- $P$
- .

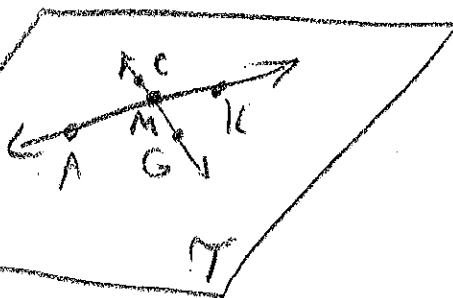
line  $j$  or  $\overleftrightarrow{MT}$ 

3. Name the plane that contains
- $\overleftrightarrow{TN}$
- and
- $\overleftrightarrow{QR}$
- .

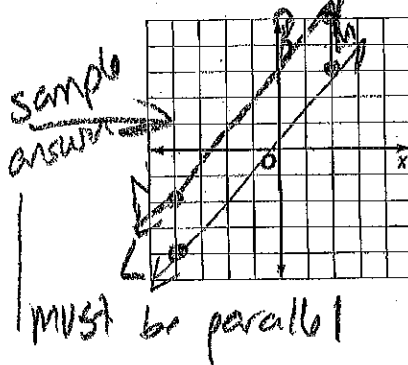
plane  $TNQ$  or plane  $S$  or (any 3 noncollinear points)

Draw and label a figure for each relationship.

- 4.
- $\overleftrightarrow{AK}$
- and
- $\overleftrightarrow{CG}$
- intersect at point
- $M$
- in plane
- $T$
- .



5. A line contains
- $L(-4, -4)$
- and
- $M(2, 3)$
- . Line
- $q$
- is in the same coordinate plane but does not intersect
- $LM$
- . Line
- $q$
- contains point
- $N$
- .

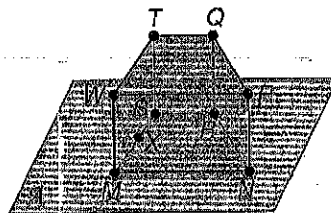


Refer to the figure.

6. How many planes are shown in the figure? 6

7. Name three collinear points.
- $M, X, S$

8. Are points
- $N, R, S$
- , and
- $W$
- coplanar? Explain.

No,  $N, R, S$  are on plane  $A$ ;  $W$  is not.

VISUALIZATION Name the geometric term(s) modeled by each object.

9.



plane

10. tip of pin

point



11.



strings

line

12. a car antenna

line

13. a library card

plane

Name Key

Date \_\_\_\_\_

## Algebra Review

Solve

Factor:

1.  $3x + 4 = 22$

$$3x = 18$$
$$x = 6$$

2.  $5(x + 2) = 14$

$$5x + 10 = 14$$
$$5x = 4$$
$$x = \frac{4}{5}$$

3.  $2x - 8 = 30$

$$2x = 38$$
$$x = 19$$

4.  $3x - 12 = 8x + 2$

$$-14 = 5x$$
$$\frac{-14}{5} = x$$

5.  $7x + 4 = 4x + 19$

$$3x = 15$$
$$x = 5$$

6.  $6(x + 5) = 5x - 4$

$$6x + 30 = 5x - 4$$
$$x = -34$$

7.  $\frac{3}{4}x + 15 = 24$

$$\frac{3}{4}x = 9$$
$$x = 12$$

8.  $\frac{1}{2}(x + 8) = 21$

$$x + 8 = 42$$
$$x = 34$$

9.  $\frac{2}{3}x - 8 = 6$

$$\frac{2}{3}x = 14$$
$$x = 21$$

Simplify.

1.  $\sqrt{50x^2}$

$$5x\sqrt{2}$$

2.  $\sqrt{108y^5}$

$$6y^2\sqrt{3y}$$

3.  $\sqrt{81x^3}$

$$9x\sqrt{x}$$

4.  $\sqrt{45}$

$$3\sqrt{5}$$

5.  $\sqrt{243}$

$$9\sqrt{3}$$

6.  $\sqrt{\frac{16}{25}}$

$$\frac{4}{5}$$

7.  $\sqrt{\frac{3}{8}}$

$$\frac{\sqrt{3}}{2\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{6}}{4}$$

8.  $\sqrt{\frac{5}{9}}$

$$\frac{\sqrt{5}}{3}$$

9.  $\frac{10}{\sqrt{24}}$

$$\frac{5\sqrt{10}}{2\sqrt{6}} \cdot \frac{\sqrt{6}}{\sqrt{6}} = \frac{5\sqrt{60}}{6}$$

10.  $\frac{14}{\sqrt{12}}$

$$\frac{7\sqrt{14}}{2\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{7\sqrt{42}}{3}$$

11.  $2\sqrt{12} - 3\sqrt{27} + 2\sqrt{48}$

$$4\sqrt{3} - 9\sqrt{3} + 8\sqrt{3}$$
$$3\sqrt{3}$$

12.  $3\sqrt{45} - 5\sqrt{80} + 4\sqrt{20}$

$$9\sqrt{5} - 20\sqrt{5} + 8\sqrt{5}$$
$$-3\sqrt{5}$$

13.  $3\sqrt{12} \cdot 2\sqrt{21}$

$$6\sqrt{3} \cdot 2\sqrt{21}$$
$$12\sqrt{63}$$
$$36\sqrt{7}$$

14.  $-3\sqrt{24} \cdot 5\sqrt{20}$

$$-6\sqrt{6} \cdot 10\sqrt{5}$$
$$-60\sqrt{30}$$

